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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,708	01/16/2004	Michael R. Cosley	560043620578	8458
28997	7590	12/13/2006	EXAMINER	
HARNESS, DICKY, & PIERCE, P.L.C			DUONG, THO V	
7700 BONHOMME, STE 400			ART UNIT	
ST. LOUIS, MO 63105			PAPER NUMBER	

3744

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,708

Applicant(s)

COSLEY ET AL.

Examiner

Tho v. Duong

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claim 14 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/25/06.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6-7, 11 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter of “a hybrid electronic package...and an array of cooling assembly” in combination with the subject matter in claim 1 is not supported by the disclosure. It appears that hybrid electronic package cooling system (shown in figure 37) is much simple than the one in claim 1. Regarding claims 11 and 13, the claimed subject matter of “a set of grooming clips mounted to said board” is not supported by the disclosure, which has the grooming clips mounted on the cover of the cold plate but not on the board.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3744

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said board mounted first exhaust manifold" in line 21.

There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

Claims 6 and 7 are objected to because of the following informalities: These two claims are identical. Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 8 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,679,315 in view of Richard. Claim 1 of the

Art Unit: 3744

patent substantially discloses all of applicant's claimed invention except for conduit and manifold assembly. Richard discloses (figures 2-4) a cooling system comprising a board having a plurality of heat generating components mounted thereon; a plurality of microscale cooling assemblies (13), each one of the cooling assemblies being connected to one of the plurality of heat generating components; an intake manifold (23) mounted to the board; an exhaust manifold (27) mounted to the board; a fluid connecting the intake manifold and each of the plurality of cooling assembly; and a fluid conduit connecting the exhaust manifold and each of the plurality of cooling assemblies. Richard further discloses (column 1, lines 28-35) that such cooling system will cool a plurality of electronic components of varying size and power wherein the modular electronic components may be service or removed without affecting the cooling system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Richard's teaching in the Patent's 315 for a purpose of cooling a plurality of electronic components of varying size and power wherein the modular electronic components may be service or removed without affecting the cooling system.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richard C. Chu (US 3,481,393) in view of Voss (US 5,220,809). Richard discloses (figures 2-4) a cooling

Art Unit: 3744

system comprising a board having a plurality of heat generating components mounted thereon; a plurality of microscale cooling assemblies (13), each one of the cooling assemblies being connected to one of the plurality of heat generating components; an intake manifold (23) mounted to the board; an exhaust manifold (27) mounted to the board; a fluid connecting the intake manifold and each of the plurality of cooling assembly; and a fluid conduit connecting the exhaust manifold and each of the plurality of cooling assemblies. Richard does not disclose details of the cold plate as claimed. Voss discloses (figures 2-4 and column 3, lines 5-24) a cold plate for cooling an electronic component, wherein the cold plate including a heat insulating housing (10), an inlet port (24) formed in the housing for receiving a heat transfer fluid, an outlet (26) formed in the housing for passing the heat transferring fluid, a thermal conductive element (30) connected to the housing, an evaporator chamber (22) formed by the housing and the conductive element (30) upstream of the outlet port (26) and a capillary passage formed in the housing between the inlet port and the evaporator chamber. Voss further discloses (column 1, lines 60-65 and column 3, lines 5-10) that such cold plate will optimize the rate of the heat dissipation for a given refrigerant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Voss's teaching in Richard's cooling system for a purpose of optimizing the rate of heat dissipation for a given refrigerant.

Claims 9-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richard and Voss as applied to claim 8 above, and further in view of Zenitani et al. (US 5,216,578). Richard and Voss substantially disclose all of applicant's claimed invention as discussed above except for the limitation of a backplane connector mounted and a face plate mounted on the board. Zenitani discloses (figures 1-3) a structure for holding packages on

Art Unit: 3744

backboard of electronic apparatus wherein the board (2) has a backplane connector (14) and a face plate (25) mounted on the board for a purpose of securing the board onto a backplane (3) and facilitating the installation or removal of the board to the backplane. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the Zenitani's connector and face plate in Richard's board for a purpose of securing the board onto a backplane and facilitating the installation or removal of the board to the backplane.

Allowable Subject Matter

Claims 1-5 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Olson (US 5,923,533) discloses a multiple tile scaleable cooling system.

Parmerlee et al. (US 4,315,300) discloses a cooling arrangement for plug-in module assembly.

Morrison (US 5,057,968) discloses a cooling system for electronic modules.

Bland et al. (US 5,177,666) discloses a cooling rack for electronic device.

Thornton (US 3,917,370) discloses an interconnect device for use in closed fluid circulating system.

Morrison et al. (US 4,493,010) discloses an electronic packaging module.

Wenke (US 4,958,257) discloses a heat conducting interface for electronic module.

Art Unit: 3744

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tyler J. Cheryl can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tho v Duong
Primary Examiner
Art Unit 3744



TD

November 11, 2006